



Forest Health Protection Pacific Southwest Region



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To: Forest Supervisor, Mendocino National Forest

Subject: Insect and disease evaluation of plantations in the Willow Creek PCT for
Chad Atwood (FHP Report N09-14)

At the request of Chad Atwood, Culturist (Mendocino NF, Upper Lake RD), Cynthia Snyder, Forest Health Protection (FHP) Entomologist and Pete Angwin, FHP Plant Pathologist, conducted a field evaluation of plantations within the Willow Creek Project on September 1, 2009. The objective of the visit was to evaluate the current forest health conditions within the stands, discuss what influence these conditions have on stand management objectives and provide recommendations as appropriate.

Background

The Mendocino National Forest has proposed 200 acres of thinning in densely overstocked plantations located in the Willow Creek area within the Rice Fork watershed which supplies water to Lake Pillsbury and the Main Eel River. Willow Creek was severely impacted by the Round Fire of 1966. Plantations were established in the 1980s on high productivity sites (average Site II) following salvage logging operations. No site preparation or fuels treatment activities were employed and these 25+ years old plantations have not had any successive release treatments. Planted seedling survival far exceeded expectations and has also been supplemented with some natural regeneration. As a result they are exhibiting stress from over stocking. Brush and hardwood competition is moderate to heavy. Trees are growing well, with most stands past crown closure. However, as crown competition continues to increase so will mortality, stress, and fuel/fire hazards.

Willow Creek project lies within the Howard WUI adjacent to the Pine Mountain LSR and has been identified as potential future habitat for Northern Spotted Owls. The proposed thinning would accelerate development of larger diameter trees, a key element in establishment of late-successional habitat. The restoration of Willow Creek has been of great interest to forest users and regulatory agencies including the Fish and Wildlife

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Service, National Marine Fisheries Service and the North Coast Water Quality Control Board. NEPA is complete for this project under the 2004 Willow Creek Mechanical Thinning and Release Project.

Stands consist primarily of ponderosa pine with lesser amounts of Douglas-fir, sugar pine, black oak and madrone. Current stocking levels average 400-600+ trees per acre (Figure 1). Proposed thinning to 109 trees per acre (20 foot spacing) will reduce inter-tree competition, treat excessive fuel loading and accelerate development of larger, more resilient stands. The thinned plantations will fit in well with the proposed fuel reduction treatments in the adjacent Pine Mountain LSR and augment adjacent mechanically masticated stands to form the backbone of SPLATS designed to break up the continuity of this large block of even-aged, highly fire-susceptible plantations.

Observations

Currently plantations are estimated to be more than two times the recommended density. There are the usual suite of plantation pests including pine shoot borer (*Eucosma sonomana*) and pine tip moth (*Rhyacionia zozana*). However, most pines are beginning to outgrow the pests and they need not become an issue in these stands. The stands are becoming very dense, and the risk of attack by western and mountain pine beetle (*Dendroctonus brevicomis* and *Dendroctonus ponderosae*, respectively) is increasing. The risk of crown fire and mortality from drought is likewise increasing. Western pine beetle and red turpentine beetle (*D. valens*) were found in some of the larger residual ponderosa pines.

Parts of the Willow Creek area have been burned more recently by the Back Fire in 2008. The Back Fire was part of the lightning complex fires in June 2008, which burned an adjacent 1,600 acres including some untreated plantations. This plantation loss and subsequent reforestation need resulting from the fire demonstrates that without thinning and fuels treatment these developing plantations are highly susceptible to wildfire and subsequent insect and disease loss. Fires which begin in or enter these plantations pose a direct threat to the Howard WUI which surrounds the southern Lake Pillsbury recreation area.

Discussion and Recommendations

Willow Creek project lies within the Howard WUI adjacent to the Pine Mountain LSR and has been identified as potential future habitat for Northern Spotted Owls. Late Successional Reserves are managed to protect and enhance conditions of late successional and old growth forest ecosystems. Important structural attributes include live old growth trees, standing snags, fallen logs on the forest floor and in streams, multiple canopy layers, canopy gaps and patchy understory. The proposed treatment would aid in the transition to owl habitat while reducing the potential for bark beetle attack by improving the vigor of residual trees.

The stands are becoming very dense, and the risk to attack by western and mountain pine beetle (*Dendroctonus brevicomis* and *Dendroctonus ponderosae*, respectively) is increasing fast. The risk to crown fire and mortality from drought is likewise increasing. I support the District plan to precommercially thin the plantations, leaving only the healthiest, most vigorous trees. These treatments, if fully implemented, will be effective in addressing concerns regarding bark beetles, fire and drought, while producing more

diverse and resilient stand structure and enhancing wildlife and timber values and meet Regional Density Management policy.

If you have any questions regarding this report and/or need additional information please contact Cynthia Snyder at 530-226-2437 or Pete Angwin at 530-226-2436.

/s/ Cynthia Snyder

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cc: Nancy Mulligan, Nancy Gard, Chad Atwood, Pete Angwin, Sheri Smith, Julie Lydick and Phil Cannon